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Part III

Department of Transportation

Federal Aviation Administration

14 CFR Part 39

Airworthiness Directives; Boeing Model 737 Series Airplanes; Final Rules and Proposed Rule

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 88-NM-66-AD; Amdt. 39-6059]

Airworthiness Directives; Boeing Model 737 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes two existing airworthiness directives (AD), applicable to certain Boeing Model 737 series airplanes, which currently require external inspection of the skin at certain fuselage lap joints for cracks, corrosion, and delamination and repair, if necessary. This amendment retains certain current requirements, but increases the area to be inspected and intensifies the methods of inspection. In addition, this amendment imposes a cabin differential pressure restriction to reduce fuselage skin stresses, thus increasing the level of safety until required initial eddy current inspections are completed. This action is prompted by reports of numerous cracks found during inspections of airplanes that have accumulated more than 40,000 landings. This condition, if not corrected, could result in rapid decompression of the airplane.

DATES: Effective November 21, 1988.

ADDRESSES: The applicable service information may be obtained from Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124. This information may be examined at FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Ms. Barbara J. Mudrovich, Airframe Branch, ANM-120S; telephone (206) 431-1927. Mailing address: FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION: A proposal to amend Part 39 of the Federal Aviation Regulations by superseding AD 87-21-08, Amendment 39-5752 (52 FR 38395; October 16, 1987), and telegraphic AD T88-10-51, applicable to certain Boeing Model 737 series airplanes, to require external and internal inspections of the skin along certain fuselage skin lap joints and bonded doublers for cracks, corrosion, and delamination; repair, if necessary; and eventual modification, was published in the Federal Register on May 31, 1988 (53 FR 19858).

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

In addition to requirements that were proposed in the Notice of Proposed Rulemaking (NPRM) this final rule includes several additional requirements, discussed in detail below, which were not subject to notice and comment.

The Air Transport Association (ATA) of America, the manufacturer, and eight airlines requested that the requirement for use of a 10 power magnifying glass in the external inspections be made optional, as necessary, due to the eye strain involved and concentration required which might be detrimental to the inspection. The FAA concurs, but has further determined that a more reliable means of detecting small cracks is required and has, therefore, substituted high frequency eddy current inspections for the proposed visual inspections for cracks, as discussed below. With respect to disbond and corrosion inspections, the FAA has further determined that a 10 power magnifying glass would be of little benefit because evidence of these problems can be reliably detected with the unaided eye. The final rule has been revised accordingly.

Several commenters also requested that paint stripping be required only to confirm positive findings. Since issuance of the NPRM, one operator found a 12-inch crack in one bay of skin along the upper rivet row of the Stringer (S)-14 lap splice, and 13 fasteners with cracks emanating from both sides in the critical upper row in the bay directly aft. This cracking was discovered while repainting the airplane and not as a result of any inspections required by previous AD's. This area had been visually inspected on a painted surface in accordance with AD T88-09-51 just 6 months and approximately 700 landings prior to discovery. Based on this incident, and the human factors difficulties associated with the performance of these inspections, the FAA has determined paint stripping is required unless the fastener is clearly visible through the paint and there are no more than 2 coats of paint on the airplane skin. The final rule has been revised accordingly. In addition, a Note has been added to the final rule to emphasize that inspections performed in accordance with existing AD's where paint stripping was not accomplished are not to be given credit for the purpose of determining compliance times with these requirements unless they were performed in accordance with the above criteria.

Additionally, one airline requested the use of sanding as an alternative to paint stripping. The FAA does not concur that the use of sanding is an adequate alternate method since the sanding process may adversely effect the detection of cracks. The FAA has determined that plastic bead paint stripping may also hide the evidence of cracking. For these reasons the final rule specifically requires chemical stripping.

The commenters objected to the use of a 5% corrosion limit for deferring repairs due to the inadequacy of equipment being used and the tolerance of the skin thickness. After further discussion with the manufacturer and certain non-destructive test (NDT) inspectors, the FAA has determined that a 10% corrosion limit will provide an acceptable level of safety, while allowing for material and equipment tolerances. The final rule has been revised accordingly.

The manufacturer requested that the threshold for the external inspections of the lap joints be changed from 40,000 landings to 45,000 landings for airplanes line number 001 through 291, based on a report that no cracks had been found on airplanes that had accumulated fewer than 47,000 landings. The FAA does not concur that the threshold for airplanes line number 001 through 291 should be extended to 45,000 landings because of a report of cracking on one airplane at 44,000 landings. This threshold remains at 40,000 landings in the final rule. The manufacturer also requested these inspections be deleted for airplanes line number 292 through 464 based on a lack of adverse service experience and the change in lap joint design for the later line number airplanes. The FAA concurs that external inspections for airplanes line number 292 through 464 can be deleted based on the service history for these airplanes, and the fact that at line number 292, Boeing made a complete redesign of the lap splice which resulted in nearly 50% reduction in the material stress level of the joint. The final rule has been revised accordingly.

The manufacturer and one operator requested that the initial compliance time be extended to 1,500 landings for the external inspections of the lap joints. The FAA concurs. Based on the fact that AD T88-10-51 required an eddy current inspection of the lap joints at Stringers 4 and 10 and a detailed visual inspection of the other lap joints, the FAA has determined that a 1,500 landing inspection threshold will provide an

acceptable level of safety. In addition, the FAA has added a requirement to operate affected airplanes in accordance with a fuselage pressure differential restriction until the initial inspections are accomplished. This reduces skin stresses and provides for an increased level of safety, further supporting the 1,500 landing compliance requirement. The final rule has been revised accordingly.

The manufacturer requested that the threshold for the external inspections of the skin along S–17 be changed from 40,000 to 45,000 landings for airplanes line number 001 through 291 because this stringer area is less critical than the lap joint, and to 60,000 landings for airplanes line number 292 through 464 based on the lack of adverse service experience in this area. The FAA does not concur with the first request because there have been reports of significant cracking on airplanes in the first group with as few as 43,000 landings. The second group of airplanes has an improved bonding process and there is no history of cracking in this group. Therefore, the FAA has revised the final rule to reflect a threshold of 60,000 landings for airplanes line number 292 through 464, while maintaining the proposed threshold for the earlier group of airplanes.

The manufacturer and two operators requested an increase in the initial compliance time for the external inspections of the skin along S–17 from 500 to 1,500 landings since this area of the fuselage is less critical than the lap joints. The FAA does not concur. While the skin at S–17 may be less critical than the lap joints, severe cracking in this area would still lead to rapid decompression of the fuselage. Particularly in light of recent reports of serious cracks, the FAA has determined that the initial compliance time of 500 landings is necessary to maintain an acceptable level of safety.

The manufacturer and three operators requested that the initial compliance time for the internal inspections on airplanes line number 001 through 291 be extended from 6 months to 24 months after the effective date of the AD for airplanes that have the external inspections accomplished at one half the required interval of 4,500 cycles or 15 months, which would maintain the structural integrity via frequent external inspections. The FAA concurs that such additional external inspections will maintain an acceptable level of safety for the interim period and the final rule has been revised accordingly.

One operator requested that the initial compliance time for the internal inspections of airplanes line number 001 through 291 be extended to the next heavy maintenance visit because it claimed the tearstraps were not disbonded. The FAA does not concur with this commenter. Due to the design of these early model lap joints and bonding techniques, the internal inspections must be accomplished, or additional external inspections performed as outlined in the previous paragraph because reports have indicated that tearstrap disbonding exists on many airplanes and the inspections are required to maintain an acceptable level of safety.

The manufacturer and one operator requested that the initial compliance time for the internal inspections of airplanes line number 292 through 464 be extended to the next heavy maintenance visit after the effective date of the final rule due to the lap joint design improvement and lack of cracking reported in this group of airplanes. The FAA concurs with the commenters and the AD has been changed to require inspection within 12,000 landings or 4 years after the effective date of the AD.

The manufacturer and one operator requested that the internal inspection of the tearstraps be limited to an area two bays above and one bay below the lap joints at S–4 and S–10, since the tearstraps adjacent to S–14, S–19, and S–25(26) are riveted to the frames, providing load transfer capability and prevention of massive disbond. The FAA concurs. The FAA has determined that this level of inspection would provide an acceptable level of safety, provided the entire panel is inspected if signs of disbond or corrosion are discovered. The final rule has been revised accordingly.

The manufacturer and one operator requested that the internal inspection between BS 259 and BS 360 be limited to the tearstraps adjacent to S–4 since forward of BS 360 the tearstraps are riveted to the frames surrounding all lap joints except at S–4, providing load transfer and prevention of massive disbond. The FAA concurs that this level of inspection would provide an acceptable level of safety and the final rule has been revised accordingly.

One operator requested that the terminating action for the inspections of the skin along S–17 and the lap joints be separated for clarity. The FAA concurs with this commenter and has revised the final rule accordingly.

Another operator commented that the terminating modification for the inspections of the skin along S–17 be optional for all airplanes affected since this area of the skin is less critical than the lap joint. The FAA does not totally concur. While the skin at S–17 may be less critical than the lap joints, severe cracking in this area would still lead to rapid decompression of the fuselage. For the reasons discussed below, however, the FAA has determined that the proposed compliance time for that aciton was excessive, and reducing the compliance time would have been beyond the scope of the Notice for this AD. Accordingly, while this final rule has been revised to make the terminating actions optional, the FAA, by separate rulemaking action, is proposing to mandate the terminating action with reduced compliance times.

An operator requested clarification of the terminating modification with respect to the tearstraps. The FAA notes that the final rule requires that tearstraps two bays above and one bay below the lap joint be assured functional by the use of mechanical fasteners where disbonding has occurred.

An operator opposed mandating the terminating action due to the average cycle time of aircraft in use by this operator. The FAA does not concur. The FAA has determined that mandating terminating action on the early airplanes, line number 001 through 291, is required to maintain safety due to: (1) the early inadequate lap joint configuration and bonding techniques; (2) a recent incident where a 15-foot long portion of skin departed an airplane in flight; (3) a recent 12-inch crack found on an airplane only 700 landings after it was inspected; and (4) a determination that long term continued airworthiness of airplanes with widespread multiple site damage cannot be assured by inspection because of the large number of these inspections and the human factors difficulties associated with the repetitious nature of the inspections. For the reasons discussed below, however, the FAA has determined that the proposed compliance time for that action was excessive, and reducing the compliance time would have been beyond the scope of the Notice for this AD. Accordingly, while this final rule has been revised to make the terminating actions optional, the FAA, by separate rulemaking action, is proposing to mandate the terminating action with reduced compliance times.

One operator requested that specific alternate methods to the eddy current inspection techniques be specified in the AD. The FAA does not concur. However, the FAA is aware that the industry is developing a sliding probe eddy current inspection technique and will review the technique upon presentation. Provisions for alternate

methods of compliance are contained in paragraph J., and requests will be approved on an individual basis, if found to be acceptable.

Based on the foregoing considerations, the FAA has determined that certain requirements which were not included in the proposed rule, must be added to the final rule in order to ensure the timely detection and proper repair of fuselage cracks. In addition to the requirement for paint stripping previously discussed, the FAA has determined that the following requirements must also be added:

- Repetitive eddy current inspections of all lap joints in addition to the detailed visual inspections originally proposed, which will increase the reliability for detection of small cracks.
- Cabin pressure differential restriction until the initial eddy current inspections are accomplished, which will reduce stresses in fuselage skins and decrease the potential for rapid decompression. This pressure differential was derived by dividing the maximum cabin pressure differential of 7.55 psi by a 1.33 safety factor. This will reduce fuselage stresses, thereby increasing the time to reach the critical crack length by an approximate factor of 3, which will provide additional safety until further action can be taken.
- Inspection of previously accomplished repairs on the skin at all lap joint and S–17 locations to ensure that these repairs were made in accordance with FAA–approved procedures, thereby assuring that the repair will not accelerate the initiation of additional cracks.
- Within 3,000 landings following any repair, replacement of all upper row fasteners in panels found to have cracks, since cracking in an area of the skin is generally indicative of widespread cracking throughout the panel, and of blind fasteners, since blind fasteners provide adequate structural integrity as an interim measure only.

Based on considerations discussed previously, the FAA has determined that the deadline for accomplishing the terminating modifications is inadequate. As discussed above, total reliance on inspections is not adequate to maintain safety. Therefore, the FAA in a companion document is proposing reduced compliance times to accomplish the modifications which will terminate the inspections of this airworthiness directive and restore the airplanes to an acceptable level of safety.

Since the issuance of the NPRM, the FAA has reviewed and approved Boeing Service Bulletin 737–53–1089, Revision 1, dated October 13, 1988, which defines the procedure for the eddy current inspection that was identified in the NPRM to be performed "in accordance with an FAA-approved procedure." The final rule has been revised to reflect the procedures in this service bulletin as an acceptable means to accomplish the required inspection. This change does not increae the scope of the final rule, nor does it increase the economic burden on any operator.

The proposed requirement to report the findings of the inspections to the Manager, Seattle Aircraft Certification Office, has been deleted from the final rule because it has been determined that this additional data is not needed.

Additional questions concerning the ongoing corrosion inspection of the lap joints have been raised. The FAA has determined that these inspections are only required to maintain an acceptable level of safety if the joint is not separated and thoroughly cleaned as described by one option in the service bulletin. The final rule has been clarified appropriately in paragraph I.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the following rule.

There are approximately 464 Model 737 series airplanes of the affected design in the worldwide fleet. It is estimated that 100 airplanes of U.S. registry will be affected by this AD, that those required actions set forth in the NPRM will take approximately 2,000 manhours per airplane to accomplish, and that the average labor cost will be $40 per manhour. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $8,000,000.

The FAA has determined that a situation exists that requires immediate adoption of this regulation. Therefore, it is found that notice and public procedure for requirements not previously proposed are impracticable, and good cause exists for making this amendment effective in less than 30 days.

The regulations adopted herein will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilites among the various levels of government. Therefore, in accordance with Exective Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

The FAA has determined that this regulation is an emergency regulation that is not considered to be major under Executive Order 12291. It is impracticable for the agency to follow the procedures of Order 12291 with respect to this rule since the rule must be issued immediately to correct an unsafe condition in aircraft. It has been further determined that this document involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). If this action is subsequently determined to involve a significant/major regulation, a final regulatory evaluation or analysis, as appropriate, will be prepared and placed in the regulatory docket (otherwise, an evaluation is not required).

List of Subjects in 14 CFR Part 39

Aviation safety, Aircraft

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends § 39.13 of Part 39 of the Federal Aviation Regulations (14 CFR 39.13) as follows:

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97–449, January 12, 1983); and 14 CFR 11.89.

2. By superseding AD 87–21–08, Amendment 39–5752 (52 FR 38395; October 16, 1987); and Telegraphic AD T88–10–51, issued May 4, 1988, with the following new airworthiness directive:

Boeing: Applies to Model 737 series airplanes, line numbers 001 through 464, certificated in any category. Compliance required as indicated, unless previously accomplished.

To prevent rapid decompression of the airplane accomplish the following:

A. For airplanes line numbers 001 through 291, prior to the accumulation of 40,000 landings, or within 10 calendar days after the effective date of this AD, whichever occurs later, restrict all flight operations to a maximum cabin pressure differential of 5.67 psi until the inspections required by paragraph B.1., below, are accomplished.

B. 1. For airplanes line numbers 001 through 291, within the next 1,500 landings after the effective date of this AD, or prior to the accumulation of 40,000 landings, whichever occurs later, unless previously accomplished within the last 3,000 landings; and thereafter at intervals not to exceed 4,500 landings or 15 months, whichever occurs first; accomplish the requirements of paragraph C., below, along the skin at all fuselage lap joints between BS 259 and BS 1016.

2. For airplanes line numbers 001 through 464 within the next 500 landings after the effective date of this AD, or prior to the accumulation of: a. 40,000 landings for airplanes line numbers 001 through 291; or b. 60,000 landings for airplanes line numbers 292 through 464; whichever occurs later, unless previously accomplished within the last 4,000 landings; and thereafter at intervals not to

exceed 4,500 landings or 15 months, whichever occurs first; accomplish the requirements of paragraph C., below, along the skin at S–17 between BS 360 and BS 540 and between BS 727 and BS 927.

C. For airplanes identified in paragraphs B.1 and B.2, above, remove paint with an approved chemical stripper, or ensure that the fastener head is clearly visible and that no more than 2 coats of paint are on the airplane skin, prior to the inspections required by this paragraph:

1. Perform a high frequency eddy current inspection for cracks along the upper rivet line at the lap joints and along both rivet lines at S–17, in accordance with Boeing Service Bulletin 737–53A1039, Revision 4, dated April 14, 1988, or Boeing Service Bulletin 737–53–1089, Revision 1, dated October 13, 1988, accordingly.

Note.—No credit will be given for previous inspections accomplished on a painted surface where the fastener head was not clearly visible or where more than 2 coats of paint were on the airplane skin.

2. Perform a detailed external visual inspection, using adequate lighting for evidence of corrosion or delamination. Inspect for small cracks, bulging skin between fasteners, blistered paint, dished or popped rivet heads, or loose fasteners. If evidence of corrosion or delamination is found, prior to further flight, perform a low frequncy eddy current inspection for corrosion to determine material loss, of the entire length of the affected panel, in accordance with Boeing Alert Service Bulletin 737–53A–1089, Revision 4, dated April 14, 1988, or Boeing Service Bulletin 737–53–1089, Revision 1, dated October 13, 1988.

3. Repair cracks, corrosion, and delamination prior to further flight (except as permitted by paragraph G., below), in accordance with Boeing Alert Service Bulletin 737–53A1039, Revision 4, dated April 14, 1988, or Boeing Service Bulletin 737–53–1089, Revision 1, dated October 13, 1988. All upper row fasteners at the lap joint and both rows of fasteners at S–17 of any skin panel, in which cracks are found, must be replaced with standard protruding head solid fasteners, in accordance with the applicable service bulletin, within 3,000 cycles following the repair. Blind fasteners are to be used as an interim repair only, and replaced with protruding head solid fasteners within 3,000 cycles following installation. Repairs installed with blind fasteners prior to the effective date of this AD must be inspected for loose or missing fasteners within 1,000 cycles after the effective date of this AD and all upper row fasteners in the affected panel must be replaced with standard protruding head solid fasteners within 3,000 cycles after the effective date of the AD. Repairs of the skin installed with countersunk fasteners, at any fuselage lap joint or along S–17, prior to the effective date of the AD must be inspected and verified as FAA-approved within 1,000 cycles after the effective date of this AD. Repairs determined not to be FAA-approved, must be replaced or modified in accordance with the FAA-approved method, prior to further flight.

D. For airplanes line numbers 001 through 291, within the next 2,250 landings or within 6 months after the effective date of this AD, whichever occurs first, or prior to the accumulation of 40,000 landings, whichever occurs later, unless accomplished within the last 9,750 landings, and thereafter at intervals not to exceed 12,000 landings or 4 years, whichever occurs first, accomplish the inspections described in paragraph F., below. If the inspections required by paragraph C., above, are repeated at intervals not to exceed 2,250 landings or 7½ months, whichever occurs first, then the requirements of paragraph F., below, may be deferred until the accumulation of 7,000 landings or 24 months after the effective date of this AD, whichever occurs first.

E. For airplanes line numbers 292 through 464, within the next 12,000 landings or 4 years after the effective date of this AD, whichever occurs first, or prior to the accumulation of 40,000 landings whichever occurs later, and thereafter at intervals not to exceed 12,000 landings or 4 years, whichever occurs first, accomplish the inspections described in paragraph F., below.

F. As required by paragraphs D. and E., above, perform a detailed internal visual inspection of tearstraps (circumferential portion of the bonded waffle doubler), not mechanically fastened to the skin between BS 360 and BS 1016 two bays above and one bay below the lap joints at S–4 and S–10, and between BS 259 and BS 360 two bays above and one bay below the lap joint at S–4 for delamination and corrosion, in accordance with Boeing Alert Service Bulletin 737–53A1039, Revision 4, dated April 14, 1988. Adequate lighting must be used for this inspection. Inspect for bulges in the doubler, white powder or a thin black line at the edges of the doubler, and missing or dished fasteners. Check for disbond by pushing outward on the skin while attempting to insert a feeler gage between the doubler and skin. If inspection areas are obscured by sealant, dirt, etc., these areas must be cleaned. If disbond or corrosion is found, inspect entire skin panel as described above in addition to one bay of the adjacent skin panel (above and below), and repair prior to further flight in accordance with Boeing Alert Service Bulletin 737–53A1039, Revision 4, dated April 14, 1988, or Boeing Service Bulletin 737–53–1089, Revision 1, dated October 13, 1988, as appropriate.

G. If corrosion found as a result of the external inspection does not exceed 10% of the skin thickness, reinspect for corrosion in accordance with paragraph C.2. or I., of this AD, as appropriate, at intervals not to exceed 2,250 cycles or 6 months, whichever occurs first, until a repair is accomplished. If such corrosion exceeds 10% of skin thickness or if cracking is found, repair prior to further flight, in accordance with Boeing Alert Service Bulletin 737–53A1039, Revision 4, dated April 14, 1988, for the skin along the lap joints, or Boeing Service Bulletin 737–53–1089, Revision 1, dated October 13, 1988, for the skin along S–17. Following such repair, resume inspections in accordance with paragraph C.2. or I. of this AD, as appropriate.

H. The accomplishment of the following two subparagraphs constitutes terminating action for the inspections indicated:

1. Accomplishment of the terminating repair at all lap joints between BS 259 and BS 1016, in accordance with Boeing Alert Service Bulletin 737–53A1039, Revision 4, dated April 14, 1988, constitutes terminating action for paragraphs A., C., and F., as they apply to lap joint areas. This repair includes replacing all upper row fasteners with standard protruding head solid fasteners and assuring the tearstraps are functional 2 bays above and 1 bay below each lap joint, by the use of mechanical fasteners where disbonding of the tearstraps has occurred.

2. Accomplishment of the preventative modification as described in Boeing Service Bulletin 737–53–1089, Revision 1, dated October 13, 1988, constitutes terminating action for the requirements of paragraphs A., C., and F. as they apply to the skin at S–17.

The repair requires using standard protruding head solid fasteners, and assuring that the tearstraps are functional 2 bays above and 1 bay below S–17, by the use of mechanical fasteners where disbonding of the tearstraps has occurred, in accordance with the Structural Repair Manual.

I. For aircraft on which the procedures described in paragraph H.1., above, have been accomplished in accordance with Part IV, A.2., of Boeing Alert Service Bulletin 737–53A1039, Revision 4, dated April 14, 1988, within 15 months after accomplishment, or within 6 months after the effective date of this AD, whichever occurs later, perform an external visual inspection of the skin for corrosion and delamination at all lap joints in accordance with that service bulletin. If corrosion is found, prior to further flight, perform a low frequency eddy current inspection of the entire length of the affected panel to determine material loss. If cracks are found, prior to further flight, perform a high frequency eddy current inspection of the entire length of the affected skin panel in accordance with the service bulletin. Repair cracks, corrosion, and delamination, prior to further flight (except as permitted by paragraph G., above), in accordance with the service bulletin. Inspections are to continue at intervals not to exceed 15 months.

J. An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

Note.—The request should be forwarded through an FAA Principal Maintenance Inspector (PMI), who may add any comments and then send it to the Manager, Seattle Aircraft Certification Office.

K. Special flight permits may be issued in accordance with FARs 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service information from the manufacturer may obtain copies upon request to Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124. This information may be examined at FAA, Northwest Mountain Region, 17900 Pacific Highway

South, Seattle, Washington, or Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 9010 East Marginal Way South, Seattle, Washington.

This amendment becomes effective November 21, 1988.

Issued in Seattle, Washington, on October 27, 1988.

Leroy A. Keith,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 88-25254 Filed 10-27-88; 4:55 pm]

BILLING CODE 4910-13-M

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14 CFR Part 39

[Docket No. 88-NM-67-AD; Amdt. 39-6060]

Airworthiness Directives: Boeing Model 737 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 737 series airplanes, which requires external inspections of the circumferential fuselage splices and internal inspections of certain bonded doublers for delamination, cracking, and corrosion. This amendment is prompted by two reports of cracking on the circumferential fuselage skin splice and several reports of delamination of the bonded doubler. This condition, if not corrected, could result in rapid decompression of the airplane.

DATE: Effective December 1, 1988.

ADDRESSES: The applicable service information may be obtained from Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124. This information may be examined at FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Ms. Barabara J. Mudrovich, Airframe Branch, ANM-120S; telephone (206) 431-1927. Mailing address; FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION: A proposal to amend Part 39 of the Federal Aviation Regulations to include an airworthiness directive which requires external inspections of the circumferential fuselage splices and internal inspections of certain bonded doublers, for delamination, cracking, and corrosion, was published in the Federal Register on May 31, 1988 (53 FR 19861).

Interest persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

This Notice was published concurrently with the Notice for Amendment 39-6059, Docket No. 88-NM-66-AD, which proposed similar inspection requirements for longitudinal lap joints. That final rule has been changed to require a cabin pressure differential limitation of 5.67 psi, eddy current inspection of all lap joints, and chemical paint stripping in the inspection area under certain circumstances. This final rule does not impose all these additional requirements, since the service history on the circumferential joints has not shown the same propensity for multiple site cracking. The requirement for paint stripping under certain circumstances is required, however, due to the need for increased reliability for crack detection.

The Air Transport Association (ATA) of America, the manufacturer, and eight airlines requested that the requirement for use of a 10 power magnifying glass in the external inspections be optional, as necessary, due to the eye strain involved and concentration required which might be detrimental to the inspection. The FAA concurs with the commenters and has determined that a close detailed visual inspection with the use of a 10 power magnifying glass is not justified based on the lack of service experience indicating that use of such a glass is necessary.

Several commenters also requested that paint stripping be required only to confirm positive findings. Since issuance of the NPRM, one operator found a 12-inch crack in one bay of skin along the upper rivet row of the S-14 lap splice, and cracks emanting from both sides of 13 fasteners in the critical upper row in the bay directly aft. This area had been visually inspected, with the paint intact, just 6 months and approximately 700 landings prior to discovery. Based on this incident, and the human factors difficulties associated with the performance of these inspections, the FAA has determined paint stripping is required to maintain an acceptable level of safety, unless the fastener is clearly visible through the paint and there are no more than two coats of paint on the airplane. The final rule has been revised to state more specifically when paint stripping is required.

Additionally, one airplane requested the use of sanding as an alternate to paint stripping. The FAA does not concur that the use of sanding is an adequate alternate method since the sanding process may adversely effect the detection of cracks.

The commenters objected to the use of a 5% corrosion limit for deferring repairs due to the inadequacy of equipment being used and the tolerance of the skin thickness. After further discussion with the manufacturer and certain mon-destructive test (NDT) inspectors, the FAA has determined that a 10% corrosion limit will provide an acceptable level of safety while allowing for material and equipment tolerances. The final rule has been revised accordingly.

One commenter requested that ferry flights be allowed for ferrying airplanes to a base to perform the necessary requirements. The FAA notes that paragraph E. of the final rule (paragraph G. of the Notice) provides for the issuance of special flight permits.

Three airlines requested better definition of the doublers to be inspected. The FAA concurs that more specificity is warranted. The final rule has been revised to include this identification of specific doublers that must be inspected. Because the identified doublers do not include tearstrap areas, the proposed exclusion of tearstrap areas is unnecessary and has been deleted from the final rule. This change does not increase the scope of the AD nor does it increase the economic burden on any operator.

One operator requested that specific alternate methods to the eddy current inspection techniques be specified in the AD. The FAA does not concur. However, the FAA is aware that the industry is developing a sliding probe eddy current inspection technique and will review the technique upon presentation. Provisions for alternate methods are contained in paragraph D., and requests will be approved on an individual basis, if found to be acceptable.

The manufacturer requested that the threshold for the external inspections be changed from 40,000 landings to 45,000 landings for airplanes line number 001 through 291, and to 60,000 landings for airplanes line number 292 through 464. The FAA concurs that the threshold for airplanes line number 292 through 464 can be extended to 60,000 landings, based on the improved bonding techniques used during manufacturing and service history of these airplanes. The final rule has been revised to reflect this comment. However, the FAA does

not concur that the threshold for airplanes line number 001 through 291 can be extended to 45,000 landings based on the reports of delamination in this group of airplanes.

The manufacturer and one operator requested that the initial compliance time be extended to 1,500 landings for the external inspections. The FAA does not concur since the commenters have provided no data to warrant this change and the final rule remains as proposed.

The manufacturer requested that initial compliance time for the internal inspections for airplanes line numbers 001 through 291 be extended to the next heavy maintenance visit after the effective date of the AD. The FAA does not concur. The FAA has determined that the compliance time, as proposed, represents the maximum interval of time allowable for all affected airplanes to continue to operate prior to the required inspections without compromising safety. Since maintenance schedules may vary from operator to operator, there would be no assurance that the inspection will be accomplished during that time.

The manufacturer also requested that the internal inspection requirements for airplanes line number 292 through 464 be deleted from the AD due to a lack of adverse service experience. After further review of the service experience and because of the improved bonding technique used on these airplanes, the FAA concurs with this comment and has revised the final rule accordingly.

The manufacturer and one operator requested that all requirements for inspections of the lower skin on airplanes on which the terminating modification specified in AD 82-01-09 (paragraph D. of the Notice) be withdrawn since the existing AD has proven to be adequate in maintaining structural capability of the lower skin. After further review of the service experience, the FAA has determined that the requirements for lower skin inspections are not necessary, as the requirements of AD 82-01-90 are adequate to maintain safety in this area. The final rule has been revised by deleting the proposed paragraph D.

One operator commented that internal inspections forward of BS 360 should be deleted from the AD because of a lack of adverse service experience and reduced loading in that area. Forward of BS 360, doublers around the forward entry and galley doors and along the BS 259 circumferential splice are the areas of concern to this commenter. This commenter also noted that some electrical components affecting safety of flight are mounted in the crown forward of BS 277 and required inspections in this area could interfere with these components. The FAA concurs. After further review of the structure and the related service history, the FAA has defined specific doublers to be inspected, and has determined that deleting the requirement for internal inspection of areas forward of BS 277 is appropriate. The final rule has been revised accordingly. The FAA has determined that this revision will not adversely affect safety due to structural configuration and service experience.

One operator commented that there was no terminating action for the inspections required in the proposed rule. The FAA concurs that the external inspection for cracks of the circumferential joints may be terminated upon the incorporation of protruding head solid fasteners, and has added a paragraph to the final rule to state this.

The requirement to report the findings of the inspections to the Manager, Seattle Aircraft Certification Office, has been deleted from the final rule because it has been determined that additional data is not needed.

The FAA has determined that clarification is necessary with respect to the use of blind fasteners, and the final rule has been revised to permit the use of blind fasteners for 3,000 landings following a repair. The FAA has determined that blind fasteners provide structural integrity as an interim measure, but must not be used as a long term modification.

Additionally, a statement has been added to the final rule to clarify the requirement for an eddy current inspection to be accomplished if a crack is found in a circumferential splice during visual inspections.

There are approximately 464 Model 737 series airplanes in the worldwide fleet. It is estimated that 100 airplanes of U.S. registry will be affected by this AD, that it will take approximately 2,000 manhours per airplane to accomplish the required actions, and that the average labor cost will be $40 per manhour. Based on these figures, the total cost impact of the AD and U.S. operators is estimated to be $8,000,000.

The regulations adopted herein will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, the FAA has determined that his regulation is not considered to be major under Executive Order 12291 or significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and it is further certified under the criteria of the Regulatory Flexibility Act that this rule will not have a significant economic impact, positive or negative, on a substantial number of small entities, because few, if any, Boeing Model 737 series airplanes are operated by small entities. A final evaluation has been prepared for this regulation and has been placed in the docket.

List of Subjects in 14 CFR Part 39

Aviation Safety, Aircraft.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends § 39.13 of Part 39 of the Federal Aviation Regulations (14 CFR 39.13) as follows:

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 40 U.S.C. 106(g) (Revised Pub. L. 97-449; January 12, 1983); and 14 CFR 11.89.

2. By adding the following new airworthiness directive:

Boeing: Applies to Model 737 series airplanes, line numbers 001 through 464, certificated in any category. Compliance required as indicated, unless previously accomplished.

To prevent decompression of the airplane, accomplish the following:

A. Within 500 landings after the effective date of this AD, or prior to the accumulation of 40,000 landings for airplanes line number 001 through 291 or 60,000 landings for airplanes line number 292 through line number 464, whichever occurs later, unless previously performed within the past 4,000 landings, accomplish the following:

1. Perform a detailed external visual inspection, using adequate lighting and, where necessary, inspection aids such as mirrors and a 10x magnifying glass, of the bonded doublers around major cutouts (i.e., entry, galley, and cargo doors and overwing exits) between body station (BS) 259 and BS 1016, in accordance with Boeing Service Bulletin 737-53-1076, dated October 30, 1986, for evidence of corrosion and delamination. Inspect for small cracks (in paint and skin), bulging skin between fasteners, blistered paint, dished or popped rivet heads, or loose fasteners.

2. Perform a detailed external visual inspection along all circumferential splices between BS 259 and BS 1016 for cracks, corrosion, and delamination of accordance with Boeing Service Bulletin 737-52-1076, dated October 30, 1986. Remove paint within an approved chemical stripper prior to inspection, or assure that the fastener head is clearly visible and that no more than 2 coats of paint are on the skin. If cracks are visually

detected, perform a high frequency eddy current inspection for cracks along the rivet row the entire length of the affected panel in accordance with the FAA-approved method as described in Boeing Service Bulletin 737–53A1039, Revision 4, dated April 14, 1988. Regardless of whether cracks are found by the visual inspections required above, perform a high frequency eddy current inspection for cracks for S–10R to S–10L in accordance with the FAA-approved method described previously, along the most forward and most aft rivet row of each circumferential splice. Terminating action for the inspections required by this subparagraph, is the replacement of the most forward and most aft fastener rows with standard protruding head solid fasteners at all circumferential fuselage splices, in accordance with an FAA-approved method. If no cracks, corrosion, or delamination are found as a result of the inspections required by paragraph A.1. or A.2., above, repeat all visual and eddy current inspections at intervals not to exceed 4,500 landings or 15 months, whichever occurs first.

B. In areas where evidence of cracks, corrosion, or delamination are found as a result of the inspections required by paragraph A., above, accomplish the following:

1. If corrosion depth, as determined by an FAA-approved low frequency eddy current (LFEC) procedure, does not exceed 10% of skin thickness, conduct the repetitive external detailed visual inspections required by paragraph A., above, at intervals not to exceed 2,250 landings or 6 months, whichever occurs first, until repair is accomplished. Following the accomplishment of such a repair, continue to inspect at intervals not to exceed 4,500 landings or 15 months, whichever occurs first, in accordance with paragraph A., above.

2. If corrosion depth, as determined by an FAA-approved LFEC procedure, found by the external inspections exceeds 10% of skin thickness, or if cracks or delamination is found, repair prior to further flight, in accordance with Boeing Service Bulletin 737–53–1076, dated October 30, 1986. Following the accomplishment of such a repair, continue to inspect at intervals not to exceed 4,500 landings or 15 months, whichever occurs first, in accordance with paragraph A., above.

3. Cracks found must be repaired, prior to further flight, in accordance with an FAA-approved method. Blind fasteners may be used as an interim repair only and must be replaced with standard protruding head solid fasteners within 3,000 cycles following installation. Repairs installed with blind fasteners prior to the effective date of this AD must be inspected for loose or missing fasteners within 1,000 cycles after the effective date of this AD, and thereafter at intervals not to exceed 3,000 cycles until replaced.

C. For airplanes line number 001 through 291, within the next 4,500 landings or 15 months, after the effective date of this AD, whichever occurs first, or prior to the accumulation of 40,000 landings, whichever occurs later, unless previously performed within the last 7,500 landings, perform an internal detailed visual inspection of the bonded doublers around major cutouts (i.e., entry, galleys, and cargo doors and overwing exits) and along circumferential splices between BS 277 and BS 1016 for evidence of corrosion or delamination in accordance with Boeing Service Bulletin 737–53–1076, dated October 30, 1986. Using adequate lighting, inspect for bulges in the doubler, white powder or a thin black line at the edges of the doubler, and missing or dished fasteners. Inspect for disbond by pushing outward on the skin while attempting to insert a feeler gage between the doubler and skin. If inspection areas are obscured by sealant, dirt, etc., these areas must be cleaned. In areas where no evidence of corrosion or delamination is found, repeat the inspection at intervals not to exceed 12,000 landings or 4 years, whichever occurs first. In areas where evidence of corrosion or delamination is found, repair in accordance with the above service bulletin prior to further flight. Following such a repair, continue to inspect at intervals not to exceed 12,000 landings or 4 years, whichever occurs first.

D. An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

Note.—The request should be forwarded through an FAA Principal Maintenance Inspector (PMI), who may add any comments and then send it to the Manager, Seattle Aircraft Certification Office.

E. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service information from the manufacturer may obtain copies upon request to Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124. This information may be examined at FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 9010 East Marginal Way South, Seattle, Washington.

This amendment becomes effective December 1, 1988.

Issued in Seattle, Washington, October 27, 1988.

Leroy A. Keith,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 88–25253 Filed 10–27–88; 4:55 pm]

BILLING CODE 4910–13–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

(Docket No. 88-NM-160-AD)

Airworthiness Directives; Boeing Model 737 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of Proposed Rulemaking (NPRM).

SUMMARY: This notice proposes an airworthiness directive (AD), applicable to certain Boeing Model 737 series airplanes, which would require that protruding head solid fasterners be installed in the upper row of all lap splices in the fuselage and in the two rows of Stringer 17. This action is prompted by reports of cracking on Boeing Model 737 series airplanes from which the FAA has determined that widespread multiple site cracking cannot be reliably detected over the long term by visual or other non-destructive inspection (NDI) techniques. This action is necessary to ensure that undetected widespread cracking is minimized in these fuselage skins. Cracks, if allowed to grow undetected, could lead to structural failure and rapid decompression of the airplane.

DATES: Comments must be received no later than December 12, 1988.

ADDRESSES: Send comments on the proposal in duplicate to Federal Aviation Administration, Northwest Mountain Region, Office of the Regional Counsel (Attn: ANM-103), Attention: Airworthiness Rules Docket No. 88-NM-160-AD, 17900 Pacific Highway South, C-68966, Seattle, Washington, 98168. The applicable service information may be obtained from Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124. This information may be examined at the FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Ms. Barbara J. Mudrovich, Airframe Branch, ANM-120S; telephone (206) 431-1927. Mailing address: FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the regulatory docket number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments specified above will be considered by the Administrator before taking action on the proposed rule. The proposals contained in this Notice may be changed in light of the comments received. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA/public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Availability of NPRM

Any person may obtain a copy of this Notice of Proposed Rulemaking (NPRM) by submitting a request to the FAA, Northwest Mountain Region, Office of the Regional Counsel (Attn: ANM-103), Attention: Airworthiness Rules Docket No. 88-NM-160-AD, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

Discussion

On October 27, 1988, the FAA issued Amendment 39-6059 (Docket No. 88-NM-66-AD), to require external visual and eddy current inspections of the skin along certain lap joints and Stringer (S)-17 and internal visual inspections of the tearstraps for corrosion, delamination, and cracks.

The Notice of Proposed Rulemaking (NPRM) (53 FR 19858; May 31, 1988) for that AD included the requirement to incorporate a terminating modificaiton. Prior to the issuance of that final rule, the FAA has determined that, for the reasons discussed below, the proposed compliance time for that action was excessive; however, reducing that compliance time would have been beyond the scope of the Notice for that AD. The terminating modificaiton, which consists of replacing the upper row of fasteners of the lap splices and the two rows of fasteners of S-17 with protruding button head fasterners was, therefore, made optional in that final rule. This NPRM proposes to mandate this modificaiton in accordance with a series of compliance times that are inversely proportional to the number of landings on the airplane. This modification is the same as the modification described in paragraph H. of the final rule referenced above.

An operator recently reported finding a 12-inch crack in the skin in the upper fastener row along S-14, and 27 fasteners with cracks emanating from both sides of the fastener holes in the two bays directly aft of the crack. These cracks were found approximately 700 landings after a detailed visual inspection performed in accordance with an earlier version of the AD. Based on this incident and extensive consultation with several fracture mechanics and aeronautical structures experts, the FAA has determined that continued airworthiness of airplanes with widespread multiple site damage cannot be assured over the long term by repetitive inspection because of the large number of required inspections and the human factors difficulties associated with the repetitious nature of the inspections. Widespread cracking, if not corrected could lead to rapid decompression of the fuselage.

Since this condition is likley to exist or develop on other airplanes of this same type design, this action proposes to require that the upper row of fasteners of the lap splices and the two rows of fasteners in S-17 be replaced with solid protruding head fasteners. Compliance times range from 6 months for airplanes with more than 70,000 landings to 36 months for airplanes with less than 40,000 landings. It is the intent of the FAA to propose future rulemaking to add this modification to the lower fastener row of the lap splices.

In addition, the FAA in interested in assuring that certain lap splices are modified on a priority schedule. Comments addressing this issue are specifically requested.

There are approxmiately 291 affected Model 737 series airplanes in the worldwide fleet. It is estimated that 100 airplanes of U.S. registry would be affected by this AD, that it would take approximately 2,016 manhours per airplane to accomplish the required modifications, and that the average labor cost would be $40 per manhour. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $8,064,000.

The regulations proposed herein would not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For these reasons, the FAA has determined that this document (1) involves a proposed regulation which is

not major under Executive Order 12291 and (2) is not a significant rule pursuant to the Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and it is further certified under the criteria of the Regulatory Flexibility Act that this proposed rule, if promulgated will not have a significant economic impact, positive or negative, on a substantial number of small entities because few, if any, Model 737 airplanes are operated by small entities. A copy of a draft regulatory evaluation prepared for this action is contained in the regulatory docket.

List of Subjects in 14 CFR Part 39

Aviation Safety, Aircraft.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend Section 39.13 of Part 39 of the Federal Aviation Regulations (14 CFR 39.13) as follows:

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); and 14 CFR 11.89.

2. By adding the following new airworthiness directive:

Boeing: Applies to Model 737 series airplanes, line numbers 001 through 291, certificated in any category. Compliance required as indicated, unless previously accomplished.

To prevent decompression of the airplane accomplish the following:

A. In accordance with the schedule set forth in paragraph B. of this AD:

1. Accomplish the terminating repair at all lap joints between BS 259 and BS 1016, which includes replacing all upper row fasteners with standard protruding head solid fasteners and assuring the tearstraps are functional 2 bays above and 1 bay below each lap joint, by the use of mechanical fasteners where disbonding of the tearstraps has occurred, in accordance with Boeing Alert Service Bulletin 737-53A1039, Revision 4, dated April 14, 1988.

2. Accomplish the preventative modification as described in Boeing Service Bulletin 737-53-1089, Revision 1, dated October 13, 1988, along S-17, using standard protruding head solid fasteners and assure the tearstraps are functional 2 bays above and 1 bay below S-17, by the use of mechanical fasteners where disbonding of the tearstraps has occurred, in accordance with the Structural Repair Manual.

B. Airplanes are to be modified as required by paragraph A., above, in accordance with the following times after the effective date of this AD:

Number of landings on effective date of this AD—	Modify within the next (months)
70,000 or more	6
60,000 to 69,999	12
50,000 to 59,999	18
40,000 to 49,999	24
Less than 40,000	36

C. For aircraft on which the procedures described in paragraph A., above, have been accomplished in accordance with Part IV, A.2., of Boeing Alert Service Bulletin 737-53A1039, Revision 4, dated April 14, 1988, within 15 months after accomplishment, or within 6 months after the effective date of this AD, whichever occurs later, perform an external visual inspection of the skin for corrosion and delamination at all lap joints in accordance with that service bulletin. If corrosion is found, prior to further flight, perform a low frequency eddy current inspection of the entire length of the affected panel to determine material loss. If cracks are found, prior to further flight, perform a high frequency eddy current inspection of the entire length of the affected skin panel in accordance with the service bulletin. Repair cracks, corrosion, and delamination, prior to further flight (except as permitted by paragraph D., below), in accordance with the service bulletin. Inspections are to continue at intervals not to exceed 15 months.

D. If corrosion found as a result of the external inspection does not exceed 10% of the skin thickness, reinspect for corrosion in accordance with paragraph C., above, at intervals not to exceed 2,250 cycles or 6 months, whichever occurs first, until a repair is accomplished. If such corrosion exceeds 10% of skin thickness or if cracking is found, repair prior to further flight, in accordance with Boeing Alert Service Bulletin 737-53A1039, Revision 4, dated April 14, 1988, for the skin along the lap joints, or Boeing Service Bulletin 737-53-1089, Revision 1, dated October 13, 1988, for the skin along S-17. Following such repair, resume inspections in accordance with paragraph C., above.

E. Accomplishment of the requirements of this AD constitutes terminating action for the requirements of Amendment 39-6059.

F. An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

Note.—The request should be forwarded through an FAA Principal Maintenance Inspector (PMI), who may add any comments and then send it to the Manager, Seattle Aircraft Certification Office.

G. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service documents from the manufacturer may obtain copies upon request to Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124. These documents may be examined at the FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or Seattle Aircraft Certification Office, FAA, Northwest Mountain Region, 9010 East Marginal Way South, Seattle, Washington.

Issued in Seattle, Washington, on October 27, 1988.

Leroy A. Keith,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 88-25252 Filed 10-27-88; 4:55 pm]

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